

**TG 175**  
**Readiness**  
**thru**  
**Hearing**  
**Conservation**

**A Guide for Unit Commanders and Supervisors**

## INTRODUCTION

**HAZARDOUS NOISE IS PART OF THE MILITARY ENVIRONMENT;** therefore, good hearing cannot be taken for granted in the Army. Preservation of the ability to hear low level sounds or speech is essential to combat readiness. A soldier's unprotected hearing can be damaged permanently, even before completing basic training. The increased demand for weapon systems to possess greater speed, range and fire power compounds the problem with higher and more hazardous noise levels.

Hearing, as a precious learning and social sense for soldiers, is no less important among civilian personnel. Many bring existing hearing loss to the job which makes the preservation of their remaining hearing imperative.

Department of the Army Pamphlet (DA PAM) 40-501 provides guidance for implementing a comprehensive hearing conservation program at all Army facilities. The seven basic components of this program are:

1. Noise hazard identification
2. Engineering controls
3. Hearing protectors
4. Health education
5. Monitoring audiometry
6. Enforcement
7. Program evaluation

*This technical guide (TG175) highlights those components that unit commanders and supervisors must recognize in order to fulfill installation hearing conservation program requirements. Included is information about personnel who can assist in supporting hearing conservation initiatives, as well as the responsibilities individuals have in protecting their hearing at the worksite.*

## READINESS AND HEARING LOSS

Why is protecting hearing so important?

- ▶ Hearing loss caused by loud noise becomes permanent and is not medically treatable.
- ▶ Impaired hearing can cause serious or fatal mistakes at work or during training and combat situations.
- ▶ Good hearing is critical to the success of the Army mission, both in offensive and defensive operations.

Offensive and Defensive Operations

- ▶ Localizing snipers
- ▶ Locating patrol members
- ▶ Determining the position, number and type of friendly or enemy vehicles
- ▶ Determining types of booby traps
- ▶ Hearing the activation of perimeter alarms
- ▶ Hearing enemy movement through leaves, grass and twigs
- ▶ Aiding in small arms accuracy, weapons identification and target acquisition
- ▶ Hearing radio messages and verbal orders

*Remember:*

- ▷ Two early signs of hearing loss may be ringing ears and speech sounding muffled.
- ▷ Speech and other important sounds have to be louder to be heard or understood.

Noise-Exposed Personnel and You

- ▶ One good attitude promotes another. As a unit commander or supervisor, your attitude toward the hearing conservation program will directly impact your personnel. Therefore, be wise and view hearing conservation measures as mission enhancers.
- ▶ Communication is actually enhanced when hearing protection is worn in noise.
- ▶ When hearing protectors are properly worn during training, there is less of a tendency to flinch at the discharge of the weapon and the soldier shoots more accurately.

*NOTE: Since most noise exposures occur during work or routine training, hearing loss is easily prevented! Your actions as a commander or supervisor can have a very dramatic and positive affect on your personnel and the success of this program. Without your support and endorsement, the hearing conservation program cannot succeed in preserving your subordinate's hearing.*

## INSTALLATION HEARING CONSERVATION SUPPORT STAFF\*

### Hearing Conservation Program Manager (HCPM)

Manages and coordinates all aspects of the program, per DA PAM 40-501.

Develops and staffs an SOP detailing the installation's program. From this, a unit commander or supervisor can prepare a unit SOP.

Provides preformed earplugs and carrying case to all noise-exposed personnel.

Ensures annual health education briefings are provided.

Ensures monitoring audiometry is performed.

Reports program participation, quality assurance and program effectiveness measures through command channels.

Reports significant threshold shift and OSHA reportable hearing loss information.

Conducts worksite visits to ensure HCP compliance.

Provides health education materials on request.

### Installation Medical Authority (IMA)

Appoints the HCPM, usually an audiologist or occupational health nurse, where available.

Notifies you about personnel who sustain a permanent hearing loss.

### Safety Manager

Conducts inspections to identify potential worksite noise hazards.

Provides the results of each inspection to the IHPM and the HCPM.

### Civilian Personnel Officer

Coordinates with the industrial hygiene program manager to identify noise-hazardous positions.

Includes in noise-hazardous job descriptions the requirement for wearing protective equipment and participating in medical surveillance.

Informs the IMA, the HCPM and the safety manager of all workers' compensation claims for hearing loss.

### Industrial Hygiene Program Manager (IHPM)

Performs an initial evaluation of noise-hazardous areas and equipment identified by the safety officer.

Surveys noise-hazardous areas and equipment within 30 days of any change in operation.

Establishes appropriate noise contours and helps in the posting of these contours.

Provides names of noise-exposed personnel and the nature of their exposures.

Establishes a time-weighted average noise level for all civilian and military personnel working in noise-hazardous and industrial areas.

Provides noise exposure information on request.

### Director of Public Works

Fabricates, posts and maintains noise-hazard caution and danger signs.

Provides guidance for appropriate engineering control measures.

\* Designation of individual duties and responsibilities is a command prerogative.

## NOISE HAZARD IDENTIFICATION AND ENGINEERING CONTROLS

- ▶ Post DA Poster 40-501A (OSHA Occupational Noise Exposure Standard and Hearing Conservation Amendment) in all noise-hazardous areas. It outlines the requirements of Title 29, Code of Federal Regulations, Section 1910.95.
- ▶ Post all noise-hazardous areas, equipment and vehicles with appropriate hearing protection signs and decals. Decals can be purchased from the Screen Print Shop, U.S. Disciplinary Barracks, Fort Leavenworth, KS [DSN 552-3359 or COMM (913) 684-3359].
- ▶ Maintain equipment in good working order and, if necessary, isolate the impact of equipment in order to reduce noise levels at the source and to eliminate any harmful health effects.
- ▶ Buy equipment that offers safe noise limits when economically and technologically feasible.

## HEARING PROTECTORS

- ▶ All personnel working in noise-hazardous areas must have hearing protectors with them at all times and use them, when appropriate.
- ▶ Available hearing protectors include preformed earplugs, noise muffs, ear canal caps, noise-attenuating helmets, as well as musician or custom earplugs. Hearing protectors can also be worn in combination, e.g., earplugs with noise muffs or noise attenuating helmet.
- ▶ Preformed earplugs, once fitted, need to be rechecked annually for appropriate size and any signs of deterioration. In some cases, individuals may require earplugs of a different size or type.
- ▶ Helmets and noise muffs need to be rechecked at least semi-annually for appropriate use.
- ▶ Additional information on hearing protectors (In Your Ears and Over Your Ears) is summarized on pages 6 and 7 of this guide.

## HEALTH EDUCATION

- ▶ Health education information must be presented annually to all noise-exposed personnel.
- ▶ There is a variety of government or commercially available videotapes, pamphlets, and posters for health education training. All are designed to inform noise-exposed personnel about preventing hearing loss.
- ▶ Army videotapes include:
  - ▷ Sounds of Combat (TVT 8-170; PIN No. 707370DA) - for military personnel
  - ▷ Hearing Protection (TVT 20-878; PIN No. 708562DA) - for all personnel

## MONITORING AUDIOMETRY

- ▶ All personnel who work in noise-hazardous areas with a time-weighted average (TWA) of 85 dBA or greater or exposure to impulse noise of 140 dBP or higher need an annual hearing check.
- ▶ Monitoring audiometry detects changes in hearing sensitivity before the loss becomes a communication handicap. Coordinate with the Hearing Conservation Program Manager to schedule all hearing tests.
  - ▷ Reference (Baseline)
  - ▷ 90-Day
  - ▷ Annual
  - ▷ Follow-up(s)
  - ▷ Termination
  - ▷ Other
- ▶ All soldiers, regardless of work environment, must receive reference and termination audiograms. The reference serves as the baseline from which any future change in hearing is compared.

## ENFORCEMENT

- ▶ As a unit commander or supervisor of noise-exposed personnel, your endorsement and active support of the installation commander's policies on hearing conservation are invaluable to the implementation and ongoing success of the program.
- ▶ Your specific responsibilities are to:
  - ▷ Enforce the use of hearing protectors.
  - ▷ Ensure that personnel report for all scheduled medical examinations.
  - ▷ Investigate and, when necessary, discipline those employees who fail to comply with command hearing conservation program guidelines.

## PROGRAM EVALUATION

- ▶ The installation Hearing Conservation Program Manager has the capability and responsibility to evaluate program participation, quality assurance and program effectiveness.
- ▶ Reports are provided at least annually to the Installation Medical Authority for the review and action of the Installation Commander.

## HEARING PROTECTORS

## IN YOUR EARS...

### Triple-Flange Earplugs<sup>1</sup>

Available in three sizes.

Fit most people.

Insert with the carrying case lid (stem holder).

Wear with the stem and third (last) flange sealing the ear canal opening.

Test for fit by gently pulling on the stem for tension; your voice should sound low in pitch.



### Single-Flange Earplugs<sup>1</sup>

Available in five sizes.

Work well for persons with crooked or large canals.

Insert with the carrying case lid (with tip stem in holder).

Wear with the tab toward the rear.

Test for fit by gently pulling on the tab for tension; your voice should sound low in pitch.



### Foam Earplugs

One size fits most.

Do not use where dirt or chemicals can transfer from your hands to the plug.

Roll and compress the plug to a size smaller than the ear canal.

Insert the plug into the ear canal; hold in place with your fingertip until the plug expands.

Alternately cover and uncover your ears with tightly pressed hands to test for fit.



### Combat Arms Earplugs

Available in one size only.

When the yellow portion is inserted into the ear canal, it is a non-linear device that aids in speech communication and detection of environmental sounds of concern or alarm in the presence of impulse noise (e.g., gunfire).

In steady-state noise, insert the olive portion into the ear canal.



### Pod Foam Earplugs

One size fits most.

Mold or form the foam before inserting.

Do not use in continuous noise that exceeds 100 dBA.



### Musician and Custom Earplugs<sup>1</sup>

Designed for musicians or other special need users.

Special filters attenuate the sound and provide an equal level of protection at most frequencies.

Some are custom molded, requiring earmold impressions.



## HEARING PROTECTORS

## OVER YOUR EARS...

### Noise Muffs<sup>2</sup>

Easy on, easy off.

Good for intermittent noise exposure.

Adjust headband for a snug fit.

Both earcups must be in complete contact with the head; maintain soft and compliant earcup seals.

Acoustic foam inserts must be in proper condition.

Wear headband over or behind your head or under your chin.

Do not alter noise muffs in any way.



### Ear Canal Caps

Good for short or intermittent use.

Good to use when muffs or plugs are inappropriate or unavailable.

Adjust headband to your head size.

Grasp each cap and work into ear canal until sealed. If caps are marked with "R" or "L", make sure caps are in the correct ear.

Do not use when noise levels exceed 95 dBA.



### Helmets<sup>2,3</sup>

Provide both head and hearing protection.

Equipped with electronic communication capability.

Combat Vehicle Crewman Headset (helmet liner for the VIS) is available in three sizes.

DH-132 Combat Vehicle Crewman's Helmet comes in three sizes with an adjustable helmet suspension.

HGU-56/P Aviation Helmet comes in six sizes.

SPH-4B Aviation Helmet is available in two sizes.



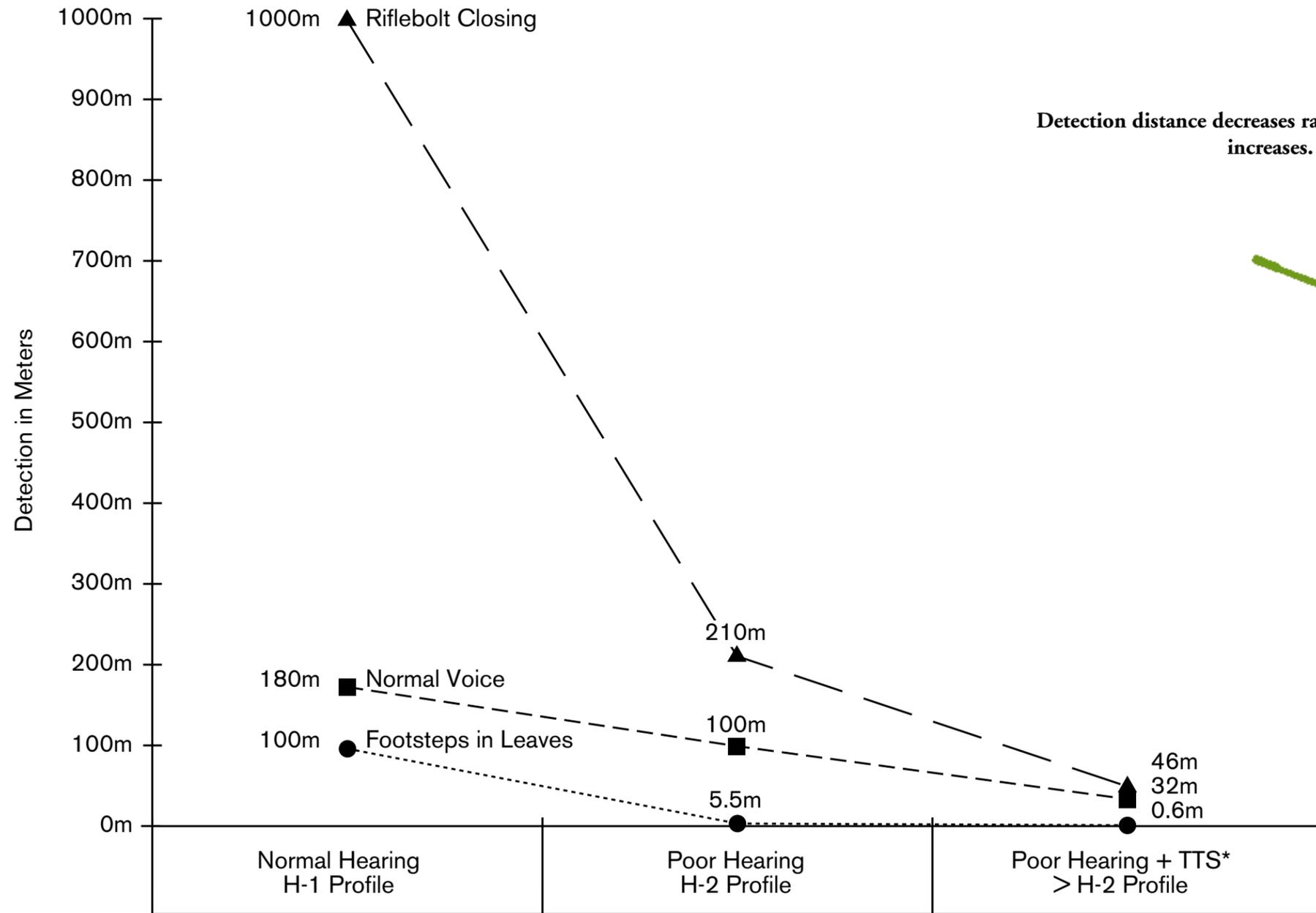
*NOTE: National stock numbers (NSN) for hearing protectors and replacement information for noise muffs (earcup seals) are listed in DA PAM 40-501.*

<sup>1</sup>Sized earplugs must be fitted under medical supervision.

<sup>2</sup>Can usually be worn in combination with earplugs for additional hearing protection.

<sup>3</sup>The PASGT helmet provides no noise protection.

DETECTION OF SOUND BY HEARING ABILITY



Detection distance decreases rapidly as hearing loss increases.



Price et al. '89

\*TTS—Temporary Threshold Shift

Technical Guide 175

Local reproduction is authorized and encouraged.

US Army Center for Health Promotion and Preventive Medicine  
Attn: MCHB-TS-CHC (Hearing Conservation Program Office)  
5158 Blackhawk Road (Bldg E1570)  
Aberdeen Proving Ground, MD 21010-5403

Phone: DSN 584-3797 or Commercial (410) 436-3797

Fax: DSN 584-1325 or Commercial (410) 436-1325

E-mail: [chppm-hcp@apg.amedd.army.mil](mailto:chppm-hcp@apg.amedd.army.mil)

Internet: <http://chppm-www.apgea.army.mil/dcpm/hcp/hcp.htm>